

Appendix C. State Technology Plan

Preparing Today for Tomorrow:

**The Educational Technology Plan for New
Jersey**

New Jersey Department of Education

Approved by State Board 12/5/07

State Board of Education

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History

New Jersey's commitment to educational technology is exemplified by its long history of coordinating K-12 initiatives into an agenda for excellence for the children of this state.

In 1993, "Educational Technology in New Jersey: A Plan for Action," a five-year plan, was developed by the Department of Education. The Plan envisioned a statewide strategy for the effective and equitable utilization of technology and the implementation of the Plan at every level throughout the state's educational system.

In 1997, the New Jersey Department of Education implemented an aggressive, systemic approach in order to accelerate the implementation of educational technology in all schools throughout the state. The articulated goals were met two years ahead of time. Due to these accomplishments, the department developed new goals and benchmarks.

The Plan was updated again in 2003, with goals that were visionary in nature and supported implementation of the belief statement that: *"All students, no matter which district or school they attend, will be able to achieve the Core Curriculum Content Standards because they will have unlimited access to people, to a vast array of curriculum and instruction, and to information and ideas -- no matter where they exist."*

The state supported educational technology implementation in New Jersey schools and the necessary infrastructure and equipment to enable it through Distance Learning Network Aid (DLNA) established in the Comprehensive Educational Improvement and Financing Act (CEIFA). Districts used the aid to provide professional development opportunities, promote electronic learning, purchase equipment to support and establish multiple networks with high-speed voice, video and data services and in certain scenarios to retrofit sites. This enabled students, teachers and administrators to have global outreach to schools, colleges, museums, libraries, science laboratories, and other resources. The DLNA allocation was placed into New Jersey State School Aid in 2003, and is no longer dedicated for educational technology expenditures.

The Department of Education's ongoing vision for educational technology in New Jersey's Schools is expressed in this current strategic Educational Technology Plan which documents the role of educational technology in promoting students' academic achievement. This plan has been updated in order to provide leadership in preparing our students for success in the 21st century.

The richness of educational technology is grounded by professional development, administrative support and vision, high speed and well-maintained infrastructure, school-wide access for administrators, students and staff all leading to increased academic achievement and global skills. Educational technology is richly embedded in New Jersey's Core Curriculum Content Standards for all students. The revised standards in 2004 included the addition of Standard 8.1 Computer and Information Literacy
http://education.state.nj.us/cccs/?_desc_standard;c=8;s=1 .

Technology planning in New Jersey has shaped several curriculum-based grant programs that were implemented in selected school districts across New Jersey. Grants aligned with the goals of the technology plan have brought about replicable models of excellence on infusing technology into instructional programs. With funding from the No Child Left Behind Act, Title II, Part D, the following programs have been supported:

- Access-Collaboration-Equity Plus (ACE+)
Established community centers that focused on improving language arts literacy skills and adult technology literacy skills.
- Kids Officially Online (KOOL)
Piloted online learning for students in demonstrated areas of curricular need.
- Math Achievement To Realize Individual eXcellence (MATRIX)
Increased achievement in the mathematics content area for students in grades 6 to 8.
- Students Using Technology To Achieve Reading – Writing (STAR-W)
Increased achievement in the language arts literacy content area for students in grades 3 to 5.

The New Jersey Department of Education continues to work to shape the future of our children by supporting the acquisition of knowledge in the content area, development and application of life-long skills and preparation for success in the 21st century.

Other Departmental Technology-Based Initiatives

In addition to providing guidelines to assist districts in planning for educational technology, the New Jersey Department of Education is making strides to improve its systems to provide more timely and accessible information to school districts. The development and implementation of these technology systems is strategically planned and coordinated in order to maximize efficiencies in fulfilling the goals of the Department. Examples of projects that are currently underway are cited below.

Grant Processing System:

A web-enabled system for all entitlement grants (Electronic Web Enabled Grant system, or EWEG) that allows districts to submit their applications online was implemented by the Office of Grants Management. This system will also soon provide for a consolidated payment system that allows a seamless process from application to final payment without having to re-key data. Ultimately EWEG will also be implemented for discretionary grants. EWEG will allow web-enabled tracking, reporting and data analysis and will expedite the review and approval process of grant applications.

Teacher Certification Information System:

The Office of Licensure and Credentials has implemented a web-based Teacher Certification Information System to support and streamline its business processes, process applications and fees, provide guidance to applicants and pre-screen candidates, perform document management, and integrate the functions of the existing computer systems into a single relational database management system. The new system enables applicants to apply for and check the status of their applications for certification over the Web.

Student Database:

NJ Standards Measurement and Resource for Teaching (NJ SMART), is a comprehensive data warehouse, student level data reporting, and unique statewide student identification (SID) system. NJ SMART provides the following important resources for school districts:

- Integrated state assessment data, providing school districts with access to assessment reports that will allow easy monitoring and comparison of critical performance measures;
- Unique student identification numbers (SID), that allow students and their performance to be tracked more effectively over time, even as students transfer in and out of school districts;
- Local datamarts, which will offer the opportunity for school districts to bring together data that are currently stored in a variety of locations into one integrated data warehouse, allowing staff to access linked student data.

EDanalyzer® is available to school districts as part of the NJ SMART portal. EDanalyzer® is a web-based tool that allows school districts to view and analyze state assessment data, as well as assessment related student demographic information that are currently in the NJ SMART data warehouse. The NJ SMART system will be further developed in a multi-phased approach for years to come.

Long Range Facilities Plan and Project Application Tracking System (LRFP/PATS):

The Office of School Facilities has procured Long Range Facilities Plan and Project Application Tracking System (LRFP/PATS) software for use by school districts and their consultants to submit their long range facilities plans (LRFP). Departmental staff use the web-based system to determine approval of the districts LRFP, eligibility of projects and tracking of approved projects.

Data Collections:

The Office of Educational and Informational Technology is working to improve the data collection process in several ways. A number of applications have been upgraded to utilize the Internet as a vehicle for districts to submit data. These applications include Special Education Annual Data Report (ADR), Limited English Proficiency Reporting (LEP), Violence and Vandalism (EVVRS), Special Education End-of-Year (EOY), Chapter 192/193 Reporting/Funding and Extraordinary Aid (EXAID) to name a few. The current version of DOEnet (Windows-based) has made DOEnet data collections considerably simpler to use.

District Budget Statement System Modernization:

The School District Budget Statement initiative seeks to replace the existing outdated MS-DOS District Budget Statement application with current proven technologies. This new system will take advantage of current technology and architectures thereby reducing the effort required to maintain the system and providing a streamlined user-friendly environment for school district budget preparation. The system will provide school districts with a powerful budgeting tool that will produce reports and analyses desired by local school districts in addition to producing the required reports for the Department of Education.

These projects support achievement of Goal 4 in this state educational technology plan. By developing web-based and database applications to automate a number of processes within the department, educators will be able to electronically submit district and school-level data, grant applications and long-range facilities plans. They will also have access to timely information about the status of certification.

Vision Statement

All students will be prepared to meet the challenge of a dynamic global society in which they participate, contribute, achieve, and flourish through universal access to people, information and ideas.

GOAL 1: All students will be prepared to excel in the community, work place and in our global society using 21st century skills.

GOAL 2: All educators, including administrators, will attain the 21st century skills and knowledge necessary to effectively integrate educational technology in order to enable students to achieve the goals of the core curriculum content standards and experience success in a global society.

GOAL 3: Educational technology will be accessible by students, teachers and administrators and utilized for instructional and administrative purposes in all learning environments, including classrooms, library media centers, and other educational settings such as community centers and libraries.

GOAL 4: New Jersey school districts will establish and maintain the technology infrastructure necessary for all students, administrators and staff to safely access digital information on demand and to communicate virtually.

*In a digital world, students need to learn to use the tools to master the learning skills that are essential to everyday life and workplace productivity. This proficiency is known as ICT (information and communication technologies) literacy, defined by the Programme for International Student Assessment as “the interest, attitude and ability of individuals to appropriately use digital technology and communication tools to access, manage, integrate and evaluate information; construct new knowledge; and communicate with others in order to participate effectively in society.” This definition **goes far beyond a narrow technical competency, which is a relatively low-level skill**, to including higher-level skills, critical thinking and intelligent, creative and ethical use of technology. –A Policymakers’ Guide to 21st Century Skills (p.11)*

GOAL 1

All students will be prepared to excel in the community, work place and in our global society using 21st century skills.

Suggested objectives for Goal 1:

1.1 Educational technology will be infused across all curricular areas:

- aligned with both the most recent version of the New Jersey Core Curriculum Content Standards (NJAC 6A:8-3.1) and
- the International Society for Technology in Education (ISTE) National Educational Technology Standards, and
- focused on student centered, problem-based, real-world curricula to attain 21st century skills.

1.2 All students will demonstrate proficiency with educational technology, information literacy, expert decision making and complex communications.

1.3 Instruction and content materials will be universally designed to assure access for all learners through technology.

1.4 Technology will be used to pursue academic excellence for every student by supporting instruction that is within and beyond the school walls.

1.5 All students and learning communities will have ubiquitous, equitable and barrier free access to on-line resources and other distance learning technologies.

1.6 Research will be conducted to identify both emerging and promising practices in educational technology so that students will continue to excel in the community, work place and in a global society.

1.7 Research-based information will be disseminated to support the development of 21st century skills for New Jersey’s educational community.

State

Examples of assistance that will be available through the New Jersey Department of Education to enhance the achievement of Goal 1:

- Maintain the New Jersey Department of Education's portal with useful and pertinent information supporting the use of educational technology across the CCCS and providing information to the educational community in New Jersey.
- Form strategic partnerships with the education and business communities to develop projects and provide resources that will enhance student achievement using educational technology and information literacy skills.
- Research both emerging and promising practices in educational technology implementation by participating in workshops, conferences/seminars at international, national, state and local levels.
- Provide research and policy support for the development and use of online courses and virtual schools.
- Identify, assist and support universal designed education to assure access to content and resources from the federal, state, county, local government, and the private sector to support necessary and effective implementation of educational technology (e.g., technology assistance).
- Collaborate with professional associations and businesses to identify and reward established educational technology projects and programs at the international, national, state, county, and local levels that are exemplary practices for the application of 21st century skills in teaching, learning, and collaboration.
- Encourage innovative educational technology programs and fill gaps in implementation through targeted grant programs at the state level.
- Conduct the annual public school technology survey and report on the results.
- Make available the results of international and national technology surveys and research with emphasis on New Jersey's results as well as related educational technology assessment information to the state's educational community and to the public.
- Model the use of technology.

Local

Indicators demonstrated by local school districts to enhance the achievement of Goal 1:

- Achieve at a minimum, a student to multimedia device ratio that equals a ratio of 4:1 with an ultimate goal of providing one-to-one access for students and staff for anywhere/any time learning.

- Provide high-speed access to the Internet for distance learning, communication and research-based activities.
- Model, maintain and share lesson plans demonstrating the infusion of technology and 21st century skills into daily school activities.
- Include in planning at the curricular levels the following concepts:
 - Implement a means for ongoing assessment of student progress in the use of technology literacy skills.
 - Demonstrate and assess student progress with the New Jersey Core Curriculum Content Standards through activities such as:
 - Student interviews
 - Student portfolios
 - Observations
 - Standards-based scoring guides
 - Surveys
 - New Jersey Statewide Assessments
 - Ongoing performance-based assessments
 - Embed technology into the learning experience in all curricular areas.
 - Implement student centered, problem-based learning environments
 - ISTE: (<http://cnets.iste.org/students/>)
 - New Jersey Technological Literacy Standards
 - http://education.state.nj.us/cccs/?_desc_standard;c=8;s=1
 - Partnership for 21st Century Skills [Http://21stcenturyskills.org](http://21stcenturyskills.org)
- Support the goals of the New Jersey Core Curriculum Content Standards through the following:
 - *Technology Planning*
 - *Community partnerships*
 - *Local Foundations*
 - *Grants, where applicable, at federal, state and local levels.*

“The kids are digital natives. We have to transform teaching and learning to meet the needs of today’s students.” –Dr. Jeanine Gendron, Broward County Schools

GOAL 2

All educators, including administrators, will attain the 21st century skills and knowledge necessary to effectively integrate educational technology in order to enable students to achieve the goals of the core curriculum content standards and experience success in a global society.

Suggested objectives for Goal 2

2.1 All educators, including administrators, will participate in ongoing, sustained, high-quality professional development activities focused on infusing 21st century skills into curricula and instructional practices.

2.2 All districts will provide professional development opportunities and technology support for educators, including administrators, in order to enhance proficiency in the planning, funding and implementation of integrating technology-based resources and in assessing technology integration.

2.3 All school administrators will model the 21st century skills necessary to provide effective and informed leadership that supports the infusion of educational technology and encourages learning beyond the school walls.

2.4 All supervision and evaluation practices will address the effective use of educational technology for student achievement of the Core Curriculum Content Standards and success in a global society.

2.5 All educators, including administrators, will use technology tools and applications to provide opportunities for authentic, student-centered, inquiry-based learning with a real-world focused curriculum.

2.6 All educators, including administrators, will use e-mail and other interactive tools to communicate with parents/legally designated caregivers, students and other educators electronically.

2.7 All educators, including administrators, will act responsibly and ethically when obtaining and using technological resources and applications.

2.8 All schools will have an instructional technology leader who offers timely, onsite guidance and modeling to enhance teacher and administrator proficiency in using and managing technology-based resources.

2.9 All educators, including administrators, will model and/or promote the effective integration of educational technology and information literacy.

State

Examples of assistance that will be provided by the New Jersey Department of Education to enhance the achievement of Goal 2:

- Continue relationship with the Educational Technology Training Centers to promote high quality technology integration into the curriculum. (<http://www.state.nj.us/njded/techno/techtran.htm>)
- Assist districts in assessing the progress of teachers in infusing technology into their curricular processes.
- Develop initiatives with institutions of higher education to improve and enhance educational technology experiences for pre-service.
- Develop initiatives in support of in-service educators, including administrators, and integrate such initiatives into continuing professional development offerings.
- Provide educational technology grant opportunities that will contribute to the achievement of the Core Curriculum Content Standards, encourage innovative programs, fill gaps in implementation and support ongoing sustained professional development.
- Continue partnering with organizations that provide professional development opportunities and educational technology conferences that demonstrate technology skills and infusion of technology into the curriculum.
- Plan for the electronic delivery of state assessments, either formative or summative, that can quickly return results and analyses to educators and parents/legally designated caregivers.
- Assist in the revision of the Professional Standards for Teachers and School Leaders to specifically require technology literacy and 21st century skills in the preparation of teachers and school leaders.
- Promote the use of the Technology Standards for School Administrators (TSSA) developed in a collaborative effort among many organizations and adopted by ISTE. (<http://osx.latech.edu/tssa/>)
- Sponsor professional development activities that will model the use of technology and include follow-up online interactive components.
- Attend national, state, county and local workshops, conferences and seminars regarding the implementation and assessment of 21st century skills; and disseminate any pertinent knowledge gained at state technical assistance sessions.
- Offer throughout the state technical assistance sessions, and make available templates, for the development of district technology plans.
- Maintain the New Jersey Department of Education's portal with pertinent educational technology information to inform the educational community in New Jersey and to provide online professional development opportunities for educators.

- Identify emerging and innovative practices in educational technology implementation and disseminate this information to districts and schools.
- Identify, recognize and promote established resources, projects and programs at the national, state, county, and local levels that are exemplary practices for the application of technology in teaching, learning, and collaboration.
- Collaborate among all offices within the New Jersey Department of Education to promote the utilization of data tools to facilitate data driven decisions in order to maximize student achievement.
- Provide research and policy support for the development and use of online courses and virtual schools by participating in workshops, conferences/seminars at national, state, and local levels.

Local

Indicators demonstrated by local school districts to enhance the achievement of Goal 2:

- Ensure that the district's existing professional development plan includes the following activities that support integration of 21st century skills across the curricula:
 - Assemble a list of current professional development activities.
 - Evaluate current professional development related to curricula to assure it models and instructs in the effective use of technology.
 - Disseminate the list to educators throughout the district to support their access to ongoing, effective and relevant staff development programs.
 - Evaluate the effectiveness of the professional development activities throughout the district.
 - Address future professional development opportunities that support ongoing, effective and relevant staff development programs that are based on evaluation results.
- Develop learning environments that promote higher order thinking skills and are supported by the district technology plan.
- Integrate the use of 21st century skills to enhance higher order thinking in daily curricular activities as documented in lesson plans.
- Assign a school-based technology coordinator or staff member specifically responsible for supporting skill development and technology infusion into the curriculum for staff and students as indicated in the technology plan.
- Include in observations a means for assessing the infusion of technology into instructional practices.
- Utilize prescriptive teacher assessments of technology skills and implementation to develop professional improvement plans for teachers and administrators.

- Provide district recognition for achievement of core proficiencies as exemplified by ISTE (standards for teachers) and TSSA (standards for administrators).
- Model the effective use of technology through the activities of administrators, faculty and staff.
- Establish a mentoring program for teachers and administrators in developing and supporting the infusion of technology across the curriculum.
- Collaborate with all New Jersey Department of Education offices in order to promote the utilization of data tools to facilitate data driven decisions in order to maximize student achievement.

For children especially, having access to technology is not a luxury, it is a social necessity.” –Ben Scott; Digital Inclusion: Social Justice in a Communications Age (<http://www.govtech.net/digitalcommunicites/story.pring.php?id=101324>)

GOAL 3

Educational technology will be accessible by students, teachers and administrators and utilized for instructional and administrative purposes in all learning environments, including classrooms, library media centers, and other educational settings such as community centers and libraries.

Suggested objectives for Goal 3

- 3.1 All students and educators will have consistent, equitable and barrier free access to appropriate technology including technologies with universal design features that assure access for all students in all learning environments.
- 3.2 All educators, including administrators and students, will have ubiquitous and effective access to on-line resources and other distance learning technologies.
- 3.3 All school districts will provide access to the Internet and multimedia content in all learning environments that supports a student-to- multimedia device ratio that equals 4:1 with an ultimate goal of providing one-to-one access for students and staff for anywhere/anytime learning.
- 3.4 All districts, schools and classrooms will be connected to high- speed voice, video and data networks in all learning environments.
- 3.5 All districts and schools will have web sites that meet the following criteria:
 - Informative, interactive and timely,
 - relevant to school and local community,
 - allows access to email (such as web portal) and network (such as VPN) for administration and staff, and
 - meets accessibility standards (Section 508 compliant (<http://www.section508.gov/>) and National Instructional Materials Accessibility Standards (<http://nimas.cast.org/>) .
- 3.6 All educators will have access to technical support via a technician and/or other means as necessary to maintain equipment and infrastructure.
- 3.7 All school districts will establish partnerships, including, but not limited to, other public agencies and entities, educational institutions, community-based organizations and private corporations to increase opportunities for sustained technological access and broad, collaborative learning environments.

- 3.8 All districts and schools will establish partnerships and collaborate with parents/legally designated caregivers and community resources to make technology available for students beyond the school day.
- 3.9 All school districts will implement their Acceptable Use Policy (AUP) and other means to ensure that all members of the learning community are able to use technological systems, online resources and software in a safe, ethical and secure manner.

State

Examples of assistance that will be provided by the New Jersey Department of Education to enhance the achievement of Goal 3:

- Encourage innovative programs and fill gaps in implementation through targeted grant programs.
- Maintain the New Jersey Department of Education's portal with pertinent information to inform the educational community in New Jersey and to provide online professional development opportunities for educators.
 - Provide web-based resources with information on Internet safety.
 - Maintain links to Acceptable Use Policies (AUPs).
 - Provide links to sites for community access and adult literacy training centers.
- Form strategic partnerships with the education and business community to develop projects and provide resources that will enhance student achievement using educational technology and information literacy skills.
- Identify both emerging and promising practices in educational technology implementation that promote equitable access and accessibility and disseminate this information to districts and schools.
- Ensure that the New Jersey Department of Education portal will comply with the New Jersey accessibility standards.
- Identify and disseminate resources from the federal, state, county, local government, and the private sector to support student, teacher and administrator access to educational technology by participating in workshops, conferences/seminars at national, state, and local levels.
- Provide research and policy support for the development and use of online courses and virtual schools by participating in workshops, conferences/seminars at national, state, and local levels.

Local

Indicators demonstrated by local school districts to enhance the achievement of Goal 3:

- Provide access to the Internet and multimedia content in all learning environments for students, teachers, administrators and staff.
- Form strategic partnerships with other school districts, educational institutions and the business community to share fiscal and programmatic resources.
- Collaborate with community resources to establish access beyond the school day.
- Continue to provide and update:
 - high speed LANs (Local Area Network)
 - high speed WANs (Wide Area Network)
 - E-mail use
 - Technology-infused lesson plans
 - Productivity software
 - Inventory of hardware and software
 - Monitoring network use and end user needs to target technical support activities
 - Administrative software
 - A safe Internet environment
 - Acceptable Use Policies (AUP) for all users
 - Maintenance of records that authorize use of a student's personal information on district- or school-based web sites. (NJ Bill A592 <http://www.state.nj.us/njded/techno/idconsent/>).
 - Lists of resources for students and parents/legally designated caregivers through Web-based information, community centers, homework hot lines, teacher e-mail, teacher-developed web sites and training/workshops provided by various districts.
 - Education of administrators, teachers, and students in the ethical use of computers.
- Review school and district web sites in relation to alignment with New Jersey's state accessibility statements.
- Facilitate communication between informational technology, educational technology, assistive technology and curriculum professionals so that the district's technological resources can be used to support the learning and achievement of all students.

“Digital inclusion is, or should be, a basic right of all Americans.” –Jim Baller, Digital Inclusion: Social Justice in a Communications Age
(<http://www.govtech.net/digitalcommunicites/story.pring.php?id=101324>)

GOAL 4

New Jersey school districts will establish and maintain the technology infrastructure necessary for all students, administrators and staff to safely access digital information on demand and to communicate virtually.

Suggested objectives for Goal 4

- 4.1 All school districts will obtain and/or maintain high-speed networks, current hardware/software and Internet access which enable all students and educators to support their curricular activities.
- 4.2 All school buildings will have the equipment, connectivity and technical support necessary to provide e-learning opportunities in all learning environments.
- 4.3 All school districts will have the technical staff to support and maintain their technology resources and systems.
- 4.4 School administration will conduct a Total Cost of Ownership analysis and use the results to budget for effective implementation and support of educational technology systems in the district.

State

Examples of assistance that will be provided by the New Jersey Department of Education to enhance the achievement of the Goal 4:

- Identify and disseminate resources such as Total Cost of Ownership from the federal, state, county and local government, and the private sector, to support necessary and effective implementation of educational technology by participating in workshops, conferences/seminars at national, state, and local levels.
- Maintain the New Jersey Department of Education’s portal with useful and pertinent information to inform the educational community in New Jersey and to provide information and access to online learning activities and courses for students and educators.

- Form strategic partnerships with school districts, educational institutions, the business community and other public and private entities in order to enhance student achievement using educational technology and information literacy skills.
- Identify infrastructure, emerging educational technologies and innovative strategies that support the goals of the K-12 learning environment.
- Support the development of a framework for virtual learning opportunities.

Local

Indicators demonstrated by local school districts to enhance the achievement of Goal 4:

Provide and maintain:

- High-speed connectivity to global and local resources through: ~
 - High speed WANs (Wide Area Networks).
 - High speed LANs (Local Area Networks)—wired or wireless.
 - Multimedia computers and mobile devices including cell phones and PDAs.
- Current productivity software (administrative, staff and student).
- Access to e-mail.
- Access to Internet.
- Access to E-learning opportunities for students and staff.
- Adequate annual technology budget.
- Technical support for both infrastructure and personnel.
- Maintenance and support to keep the current infrastructure fully operational.
- Timely replacement of obsolete equipment.